Papaver somniferum—Opium Poppy.

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STANDARDIZED PRODUCTS

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P37
1911

A DESCRIPTIVE LIST OF DRUG EXTRACTS STANDARDIZED BY CHEMICAL OR PHYSIOLOGICAL MEANS

Together with a List of the Various Forms in which these Drugs are Marketed

Mr. Jensen's copy -
Donated by
Mr. Jensen.
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PARKE, DAVIS & COMPANY

1911

MISSOURI BOTANICAL GARDEN LIBRARY

Trelease Collection

STANDARDIZED PRODUCTS.

From the very inception of our business we have subjected all our chemical supplies to searching tests for purity and identity. The medical and pharmaceutical professions have always recognized the variation in the purity of chemical salts, but for some inexplicable reason they have not seemed to fully appreciate the fact that the market abounds in therapeutic drugs and galenical preparations whose medicinal value is conjectural. Some are practically inert, and some are potent to the point of danger.

A short time ago a chemist bought ten samples of tincture of opium in which the content of morphine varied from 2.7 to 22.8 per cent. He also examined three tinctures of aconite, one of which was found to contain 9 per cent. more aconitine than the standard required, and another 20 per cent. less.

Samples of belladonna preparations showed from 25 to 45 per cent. less of mydriatic alkaloids than officially required in the powdered extract of the leaves, and 11.5 per cent. less in the fluid extract of the root. Some powdered nux vomica was found to be comparatively worthless, while a few tinctures of this drug revealed an excess of strychnine —in one case 19 per cent.

A well known pharmacologist recently examined tinctures

April 19, 2004

of digitalis, strophanthus and ergot from supposedly reliable sources and found that they varied in strength in the ratio of 1 to 4.

Any number of instances could be cited to show how variable and unreliable are fluid extracts and tinctures made according to old and imperfect methods, and which have not been subjected to a rigid examination to determine their values as medicinal agents.

Long ago we became convinced that the only way to insure, in a given product, exact and uniform medicinal action was to *standardize* it—that is, to adjust it to a definite alkaloidal or other standard by systematic assay.

We entered the field of standardization thirty years ago; *we were the pioneers*—the first to abandon the uncertain methods in vogue and to make use of accurate processes—the first to prove the activity of drug products and to systematically measure that activity.

To one product after another, therefore, we began to apply certain chemical tests to assure ourselves of their potency, and proceeded, scientifically, to adjust them to a uniform standard of strength—so that each dose might always be relied upon, barring idiosyncrasy in the patient, to exert the same measure of therapeutic effect.

Fifteen years ago we realized the limitations of chemical testing—some important drugs, containing powerful active principles, could not be assayed in that manner. The chemist might examine two samples of cannabis indica, for example, and find that, so far as his tests went, they

Atropa Belladonna—Belladonna.

were exactly alike, yet when given to animals or to patients one might prove very active and the other entirely inert.

The only way in which such drugs can be tested is upon living animals, *i.e.*, by the physiologic method. As we were the first manufacturers to adopt the principle of chemical standardization, so also were we the first to work out and apply practical methods for physiologically assaying drugs not amenable to chemical assay.

In the current medical press appear utterances like this: "We are realizing more and more the need of some kind of assay for most drugs. It becomes evident that, in some cases, ordinary chemical methods do not suffice to give full information concerning a drug. The effect of digitalis on the frog's heart or that of ergot on the cock's comb are known to give a truer indication of the therapeutic value of these drugs than any isolated chemical test."

The Pharmacopœia has adopted the principle of chemical standardization. In its eighth revision it requires alkaloidal standards of strength for twenty-one drugs. In addition to this it has recognized the physiologic method as the only one applicable to antidiphtheric serum, and a committee has been appointed to determine how far physiologic assays can be adapted to the ninth revision of the U. S. Pharmacopœia.

We do not restrict standardization to a few drugs; our requirements are more rigid than those of the Pharmacopœia; we standardize all those which are ordinarily regarded as toxic or which possess such decided activity as to require accurate dosage. Every pill, every elixir and every

compound of our output in which these drugs enter as ingredients are included in this category. An examination of our price list reveals the fact that more than one thousand of our products are rendered definitely and uniformly active by our perfected system of testing.

For this work we maintain laboratories which afford unequaled facilities—under the supervision of scientists of world-wide reputation.

The drugs herein tabulated comprise the most important of those which depend for their value upon a determinable or assayable active principle.

PARKE, DAVIS & CO.

ACONITE.

Also known as *Monkshood* and *Wolfsbane.*

Leaves and root of *Aconitum napellus* (Linne) are used.

Contains three alkaloids, of which *aconitine* is the most active.

Circulatory sedative; sudorific; antineuralgic; anodyne.

Employed in sthenic fevers, acute inflammations, and neuralgia; also locally in rheumatic and other pains.

STANDARDIZED PRODUCTS:

Fluid Extract Aconite leaves; tested physiologically. Dose, 1 to 3 mins.

Fluid Extract Aconite, U. S. P.; alkaloidal standard, 0.4% aconitine. Tested physiologically also. Average dose, 1 min.

Tincture Aconite, U. S. P.; alkaloidal standard, 0.045% aconitine. Tested physiologically also. Average dose, 10 mins.

Solid Extract Aconite root; tested physiologically. Dose, 1-20 to 1-5 gr.

Powdered Extract Aconite leaves; tested physiologically. Dose, 1-4 to 1 gr.

Powdered Extract Aconite root; tested physiologically. Dose, 1-20 to 1-5 gr.

Tablet Triturates of Tincture Aconite and Fluid Extract Aconite root, in grainages of 1-10 min. to 2 mins.

Pills and *Tablet Triturates* of Aconitine (crystals), 1-500 gr. to 1-100 gr.

Also various combinations in pill and tablet form.

NOTE.—These products are prepared from crude material that has been carefully garbled and inspected. The root as it appears on the market is especially variable, many parcels containing a considerable proportion of inert or defective roots; among these are the root of *Imperatoria ostruthium* and other varieties of the drug, of which there are a large number. We reject annually many lots of defective and spurious aconite, employing only the *select* of the market. Experience teaches that this drug gives the best results when administered in minute and frequently repeated doses. For most purposes the tincture is preferable; of this from 5 to 10 minims may be mixed with about four ounces of water and a teaspoonful given every hour until the desired effect is obtained.

ANHALONIUM.

Also known as *Pellote* and *Mescale Buttons.*

The dried tops of *Anhalonium Lewinii* (Henning), a cactus indigenous to Mexico, are used.

Contains several alkaloids, of which the most important appears to be *anhalonine.*

Cardiac tonic; nervine.

Employed in neurasthenia, hysteria, asthma, and hypochondriasis.

STANDARDIZED PRODUCT:

Fluid Extract Anhalonium; standard, 5% alkaloids.
Dose, 2 to 10 mins., cautiously.

Cannabis sativa—Indian Hemp; American Hemp.

ASAFETIDA.

A gum-resin from the root of *Ferula foetida* (Bunge).

Contains *ferulaic acid*, resin, a volatile oil and several terpenes.

Antispasmodic; carminative; expectorant.

Employed in hysteria, hypochondriasis, convulsions, flatulence, and spasmodic pectoral affections.

STANDARDIZED PRODUCTS:

Fluid Extract Asafetida. Dose, 10 to 30 mins.

Tincture Asafetida, U. S. P. Each 100 Cc. represents 20 grammes of the drug. Average dose, 15 mins.

Chocolate-coated Tablets of Asafetida, 1 gr. to 5 grs.

Pills of Asafetida, 1 gr. to 5 grs.

Also various combinations in pill and tablet form.

NOTE.—The above products are made from selected lots of the drug shown by assay to contain not less than 50 per cent. of alcohol-soluble resin and which, on incineration, yield less than 10 per cent. of ash. There are several grades of the drug in commerce; the inferior grades contain various impurities such as sand, gypsum and flour, which sometimes exceed 30 per cent. of their weight.

BELLADONNA.

Also known as *Deadly Nightshade.*

The dried leaves and root of *Atropa Belladonna* (Linne) are used.

Contains chiefly two isomeric alkaloids, atropine and hyoscyamine (also hyoscine, belladonine and atropamine). The root contains a larger percentage of alkaloids than the leaves.

Anodyne; antispasmodic; antihydrotic; antigalactic; mydriatic.

Employed in the treatment of night sweats, mastitis, galactorrhea, asthma, spasm of the urethra and bladder, whooping-cough, acute sore-throat, collapse; and, in the form of ointment or plaster, for the relief of local nerve pains.

Standardized Products:

Fluid Extract Belladonna leaves; standard, 0.3% mydriatic alkaloids. Dose, 1 to 4 mins.

Fluid Extract Belladonna root, U. S. P.; standard, 0.4% mydriatic alkaloids. Average dose, 1 min.

Tincture Belladonna leaves, U. S. P.; standard, 0.03% mydriatic alkaloids. Average dose, 8 mins.

Solid Extract Belladonna leaves, U. S. P.; standard, 1.4% mydriatic alkaloids. Average dose, 1-5 gr.

Solid Extract (strictly alcoholic) Belladonna leaves; standard, 2.75% mydriatic alkaloids. Dose, 1-12 to 1-3 gr.

Solid Extract Belladonna root; standard, 2% mydriatic alkaloids. Dose, 1-8 to 1-2 gr.

Powdered Extract Belladonna leaves; standard, 1.4% mydriatic alkaloids. Dose, 1-8 to 1-2 gr.

Powdered Extract Belladonna root; standard, 2% mydriatic alkaloids. Dose, 1-8 to 1-2 gr.

Pills of Belladonna (leaves) extract, 1-8 gr. and 1-4 gr.

Tablet Triturates Belladonna (leaves) fluid extract, 1-2 min. and 1 min.; tincture, 1, 2 and 5 mins.; extract, 1-8 gr. and 1-4 gr.

Pills of Atropine (crystals) and Atropine sulphate in various grainages.

Tablets of Atropine sulphate in various grainages.

Also many combinations in pill and tablet form.

NOTE.—Belladonna is often advantageously combined with aconite in fevers—when there is cerebral congestion. It should be given in small doses; five to ten minims of the tincture may be added to four ounces of water, and a teaspoonful of this administered every hour. The drug has also proved serviceable in enuresis; in this disease, however, it must be pushed until the physiologic effect is produced. In constipation Belladonna does good by depressing the inhibitory nerves of the intestine; therefore it is a useful component of cathartic preparations. The dried leaves vary remarkably in their percentage of alkaloid; often the finest looking ones have to be rejected because inferior in strength to smaller and less sightly leaves. We debar old and musty specimens, for it is known that they undergo change through absorption of moisture and lose a portion of their active nitrogenous matter. The leaves and roots used by us are botanically authentic and free from adulterants.

CANNABIS SATIVA.

Also known as *Indian Hemp* and *American Hemp*.

The dried flowering tops of *Cannabis sativa* (Linne) are used.

The active constituents are not well understood at present, and the nomenclature of different authorities is confused.

Narcotic; analgesic; sedative.

Employed in neuralgia, insomnia, delirium tremens, hysteria, headache, and chorea.

STANDARDIZED PRODUCTS:

Fluid Extract Indian Cannabis (U. S. P.); tested physiologically. Average dose, 1 min.

Fluid Extract Cannabis Americana; tested physiologically. Average dose, 1 min.

Tincture Indian Cannabis (U. S. P.); tested physiologically. Average dose, 10 mins.

Solid Extract Indian Cannabis (U. S. P.); tested physiologically. Average dose, 1-5 gr.

Solid Extract Cannabis Americana; tested physiologically. Average dose, 1-5 gr.

Powdered Extract Indian Cannabis; tested physiologically. Dose, 1-2 gr. to 4 grs.

Pills Cannabis Indica extract, 1-4 gr. and 1-2 gr.

Tablet Triturates Cannabis Indica extract, 1-10 gr., 1-8 gr., and 1-4 gr., and Cannabis Indica tincture (U. S. P.), 2 mins.

Also a number of combinations.

NOTE.—The home-grown variety of the drug, *Cannabis Americana*, is quite as efficient as the imported drug, and

Cinchona Calisaya—Yellow Cinchona.

less costly. The imported Cannabis varies extremely in activity and much of it is practically inert or flagrantly adulterated; so that the greatest watchfulness is necessary to insure getting a drug of good quality. We test our products of Cannabis physiologically—on dogs; this is essential, for the chemical estimation of the resin is no guide to the value of the drug. A standard dose of the lot to be tested is administered in capsule to a dog of average nervous sensibility. The effect of this dose is carefully compared with that of a similar dose of standard Cannabis administered to another dog at the same time and under the same conditions. The doses are then reversed; that is, the dog that has received the test dose receives a dose of the standard drug, and a second observation is made. A test dose is finally reached that will produce the same action as the dose of the standard; and the amount of dilution or concentration necessary to bring the tested product to the required strength is determined. The degree of accuracy with which the test is carried out depends largely upon the experience and care of the observer.

CINCHONA.

Also known as *Peruvian Bark.*

The dried bark of *Cinchona calisaya* (yellow), *Cinchona ucujensis* (pale), and *Cinchona succirubra* (red) is used. The last-named is richest in alkaloids.

The chief constituents of the bark are quinine, quinidine, cinchonidine, and cinchonine.

Tonic; antiperiodic.

Employed in malaria, anorexia, debility.

STANDARDIZED PRODUCTS:

Fluid Extract Cinchona, U. S. P.; standard, 4% ether-soluble alkaloids, anhydrous. Average dose, 15 mins.

Fluid Extract Cinchona, detannated. Dose, 1-2 to 1 fl. dr.

Fluid Extract Cinchona, pale; standard, 3% ether-soluble alkaloids. Dose, 1-2 to 1 fl. dr.

Fluid Extract Cinchona, red; standard, 5% anhydrous alkaloids. Dose, 1-4 to 1 fl. dr.

Also several compound fluid extracts.

Tincture Cinchona, U. S. P.; standard, 0.75% anhydrous ether-soluble alkaloids. Average dose, 1 fluidrachm.

Tincture Cinchona Compound, U. S. P. Each 100 Cc. represents: Red Cinchona, yielding not less than 5% of anhydrous cinchona alkaloids, 10 Gm. —with bitter orange peel, 8 Gm., and serpentaria, 2 Gm. Average dose, 1 fluidrachm.

Solid Extract Cinchona; standard, 16% ether-soluble alkaloids. Dose, 5 to 20 grs.

Solid Extract Cinchona, pale; standard, 12% ether-soluble alkaloids. Dose, 5 to 25 grs.

Solid Extract Cinchona, red; standard, 20% alkaloids. Dose, 5 grs. and upwards.

Powdered Extract Cinchona; standard, 16% ether-soluble alkaloids. Dose, 10 to 30 grs.

Elixir Calisaya bark, 40 grs. to the fluidounce.

Elixir Calisaya alkaloids; each fluidounce represents **40 grs. of the bark.**

Wine Cinchona Calisaya bark, 40 grs. to the fluid-**ounce.**

Esencia de Calisaya. A very palatable preparation of cinchona calisaya bark; each fluidounce repre-**sents 24 grs.**

Pills and *Compressed Tablets* of quinine sulphate, quinine bisulphate, quinine arsenate, quinidine sulphate, cinchonidine dihydrobromide, cinchonidine salicylate, and cinchonidine sulphate, in various **grainages.**

Also many combinations in elixir, pill and tablet form.

NOTE.—According to pharmacologists there are seventy-three false cinchonas, and defective and even worthless barks are plentiful in the market. None of this shoddy bark finds admittance to our laboratories—every purchase we make must pass botanical examination and chemical assay. The active principles of Cinchona vary quantitatively in different lots of the same variety; consequently, no preparation of the drug is fit to use which has not been subjected to exact chemical assay—as the above products invariably are.

COCA.

The dry leaves of *Erythroxylon Coca* (Lamarck) are used.

Contains several alkaloids, chief of which is cocaine (chemically, methyl-benzoyl-ecgonine). Contains also a small amount of tannic acid.

Stimulant; tonic; restorative.

Useful in nervous and muscular debility; in convalescence from specific fevers; and in mental exhaustion.

Most often utilized in the form of cocaine, as a local anesthetic in minor surgery and as an internal remedy in gastrodynia and excessive vomiting.

Standardized Products:

Fluid Extract Coca, U. S. P.; standard, 0.5% ether-soluble alkaloids. Average dose, 30 mins.

Fluid Extract Coca, Miscible; standard, 0.5% ether-soluble alkaloids. Dose, 1-2 to 1 fl. dr.

Solid Extract Coca; standard, 2% ether-soluble alkaloid (cocaine). Dose, 10 to 25 grs.

Powdered Extract Coca; standard, 2% ether-soluble alkaloid (cocaine). Dose, 10 to 25 grs.

Wine of Coca. Each fluidounce represents 60 grs. of the drug.

Hypodermatic Tablets of Cocaine hydrochloride, 1-12 gr. to 1-2 gr.

Tablet Triturates of Cocaine hydrochloride, 1-20 gr. to 1-4 gr.

Cocaine *hydrochloride in crystals*, large and small.

Convallaria majalis—Lily of the-valley.

Cocaine Hydrochloride Tablets, Soluble, 1⅛ grs. and 2¼ grs.

Cocaine Hydrochloride Solutions, 2% and 4%, *with Chloretone.*

Also combinations in pill, elixir, wine, and tablet form.

NOTE.—The value of Coca leaves depends largely upon the manner in which they are harvested; the choice leaves in commerce are those which have been picked by hand and in warm, dry weather so that they may be dried in as short a period as possible; undue exposure to the sun has a bad influence upon the alkaloids—the cocaine is apt to split up into several substances (among which is a base called ecgonine) that have totally different properties. We not only obtain our crude drug from trustworthy sources, but test all purchases by assay, and apply the alkaloidal test to the finished products.

COLCHICUM.

Also called *Meadow Saffron.*

The root and seed of *Colchicum autumnale* (Linne) are used.

Colchicine, an alkaloid, is the active constituent.

Sedative; alterative; diuretic; expectorant.

Used chiefly in rheumatism, gout, asthma, and ascites from hepatic obstruction.

STANDARDIZED PRODUCTS:

Fluid Extract Colchicum root (N. F.); standard, 0.35% colchicine. Dose, 2 to 8 mins.

Fluid Extract Colchicum seed (U. S. P.); standard, 0.4% colchicine. Average dose, 3 mins.

Tincture Colchicum seed (U. S. P.); standard, 0.04% colchicine. Average dose, 30 mins.

Solid Extract Colchicum corm (U. S. P.); standard, 1.4% colchicine. Average dose, 1 gr.

Powdered Extract Colchicum root; standard, 1.4% colchicine. Dose, 1-3 gr. to 1½ grs.

Powdered Extract Colchicum seed; standard, 1.8% colchicine. Dose, 1-3 gr. to 1½ grs.

Wine Colchicum root (U. S. P. 1890), 40 Gm. in 100 Cc.

Wine Colchicum seed (U. S. P.), 10 Gm. in 100 Cc.

Tablet Triturate Colchicum root, fluid extract, 1 min.

Tablet Triturate Colchicum seed, tincture (U. S. P.), 5 mins.

Pill Colchicine, 1-60 gr.

Tablet Triturates Colchicine, 1-100 gr. and 1-50 gr.

Also various combinations.

NOTE.—The contrary opinions of the value of this drug are perhaps due to its inequality. Its medicinal virtues depend upon the season in which it is collected; early in the spring it is too young to have fully developed its peculiar properties, and late in the fall it has become exhausted by the nourishment afforded to the new plant. We select carefully the properly picked and dried drug for our preparations.

CONIUM.

Also known as *Poison Hemlock.*

The full-grown but unripe fruit of *Conium maculatum* (Linne) is used.

Contains several alkaloids, but chiefly coniine, which is a pyridine derivative.

Antispasmodic; sedative; anodyne.

Of value in chorea, whooping-cough, and mania; locally in pleuritis and neuralgia.

STANDARDIZED PRODUCTS:

Fluid Extract Conium leaves. Dose, 5 to 20 mins.

Fluid Extract Conium (U. S. P.); standard, 0.45% coniine. Average dose, 3 mins.

Solid Extract Conium leaves. Dose, 2 to 5 grs.

Solid Extract Conium fruit; standard, 2% coniine. Dose, 1 to 3 grs.

Powdered Extract Conium leaves. Dose, 2 to 5 grs.

Tablet Triturate Conium fruit, tincture, 1 min.

Hypodermatic Tablet Coniine hydrobromide, 1-8 gr.

Also various combinations.

NOTE.—This powerful drug affords a good argument for the necessity of maintaining strict censorship over crude materials and also for exact standardization. "The plant varies in narcotic power according to the weather and the climate, being most active in hot and dry seasons and in warm countries. On undue exposure the drug loses its fine green color and deteriorates — some old samples are destitute of narcotic principle. One chemist found that his percolate from the seeds was ten times stronger than that

from the leaves. Commercial Conium sometimes contains other umbelliferous plants or it may be wholly composed of such plants, and even anise has been used as an adulterant of the fruit."

CONVALLARIA.

Also known as *Lily-of-the-valley.*

The dried rhizome and roots of *Convallaria majalis* (Linne) are used.

Contains two glucosides—convallarin and convallamarin.

Cardiac tonic; diuretic.

Serviceable in functional affections of the heart and in cardiac dropsy.

STANDARDIZED PRODUCTS:

Fluid Extract Convallaria (U. S. P.); tested physiologically. Average dose, 200 heart tonic units* (8 mins.).

Tablet Triturate Convallamarin, 1-50 gr.

NOTE.—This drug is physiologically standardized—by systematic tests on live frogs. The procedure is similar to that carried out in the case of digitalis and other heart tonics. In certain cases Convallaria is said to give better results than digitalis. It is said not to be cumulative and also that it may be given with impunity. "It may be administered for a few days and then discontinued for as many days, when its influence remains. If prompt effects

*A heart tonic unit is ten times the normal minimum fatal dose per gramme body weight of standard test frogs when administered under proper test conditions. Literature on application.

Digitalis purpurea—Foxglove.

are desired the tincture in full doses can be given in hot water. Its best effects are seen in the dropsy of heart disease."

DIGITALIS.

Also known as *Foxglove.*

The dried leaves of *Digitalis purpurea* are used.

Contains several glucosides, among which are digitalin, digitoxin and digitonin.

Heart tonic; diuretic.

Employed in myocarditis, cardiac dilatation, functional palpitation, renal dropsy secondary to hypertrophy with failing compensation, and cardiac disease in general when the nervo-muscular structures of the heart-wall fail.

STANDARDIZED PRODUCTS:

Fluid Extract Digitalis (U. S. P.). Average dose, 1 min.

Fluid Extract Digitalis (P. D. & Co.); tested physiologically. Average dose, 4 heart tonic units* (1 min.).

Tincture Digitalis (U. S. P.); tested physiologically. Average dose, 6 heart tonic units* (15 mins.).

Tincture Digitalis, fat-free; tested physiologically. Average dose, 6 heart tonic units* (15 mins.).

Solid Extract Digitalis (U. S. P.); tested physiologically. Average dose, 2 heart tonic units* (about 1-5 gr.).

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*A heart tonic unit is ten times the normal minimum fatal dose per gramme body weight of standard test frogs when administered under proper test conditions. Literature on application.

Powdered Extract Digitalis; tested physiologically. Average dose, 2 heart tonic units* (about 1-5 gr.).

Concentration Digitalisin.

Digitalone, a refined preparation of digitalis leaves, suitable for oral and hypodermatic use; free from alcohol and extraneous matter, and consequently non-irritating. Dose, 15 to 30 minims; hypodermatic dose, 8 to 15 minims.

Tablet Triturates Digitalis fluid extract, 1-10, 1-2 and 1 min., and Digitalis tincture (U. S. P.), 1-2 min. to 5 mins.

Pills of Digitalin, pure (German), 1-100 gr. and 1-60 gr., and of Digitalis extract, 1-2 gr.

Hypodermatic Tablets and *Tablet Triturates* of Digitalin, pure (German), 1-500 gr. to 1-2 gr.

Also various combinations in pill and tablet form.

NOTE.—The above products are made from the best obtainable second-year leaves—botanically and microscopically verified. On account of the delicate structure of the glucoside present, the leaves must be extracted with great care, and they cannot be assayed chemically; the medicinal value of Digitalis can be gauged only by determining its effects upon living animals. The minimum fatal dose of the drug per gramme of body weight, for standard test frogs, is determined by injecting various sized doses into the abdominal sac. The minimum fatal dose thus ascertained serves as a gauge for adjusting the strength of the product to conform to our standard, which is 100 per cent. of the activity of a first-class quality of crude drug.

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*A heart tonic unit is ten times the normal minimum fatal dose per gramme body weight of standard test frogs when administered under proper test conditions. Literature on application

ERGOT.

Also known as *Secale Cornutum*, or spurred rye.

The sclerotium of the fungus *Claviceps purpurea* (Fries), appearing on rye and other vegetation.

The chemistry of ergot is much confused and different authorities recognize different alkaloidal or glucosidal bodies as the chief active principles. In some cases the same name is given to different bodies, and *vice versa*. Among the constituents stated to occur in ergot are cornutin (Keller); ergotoxin (Barger and Carr); ergotin (Wenzell); sphacelotoxin (Jacobi); ergotinic acid (Kobert); sphacelinic acid (Kobert); and a number of other bodies, including a sugar, an oil, and a coloring matter.

Hemostatic; oxytocic; antihydrotic; emmenagogue; parturient.

Employed in menorrhagia and other types of internal hemorrhage; night-sweats, uterine inertia, paraplegia, chorea, enuresis, and chronic cerebral congestion.

STANDARDIZED PRODUCTS:

Fluid Extract Ergot (U. S. P.); tested physiologically. Average dose, 30 mins.

Fluid Extract Ergot, ethereal; tested physiologically. Dose, 5 to 60 mins., as required.

Solid Extract Ergot (U. S. P.); tested physiologically. Average dose, 4 grs.

Powdered Extract Ergot; tested physiologically. Dose, 1 to 5 grs.

Tablet Triturates of Ergot extract, 1 gr., and of the fluid extract, 1 min.

Ergone. A liquid form of ergot which may be administered internally or subcutaneously; it is purified and physiologically standardized and is equivalent, minim for minim, to the official fluid extract when the latter is made from best quality drug. Every lot of Ergone is tested upon animals to prove its freedom from irritating properties and its normal potency. Dose, 30 to 60 minims; hypodermatic dose, 15 to 30 minims.

Ergot Aseptic. This is a more concentrated form of ergot than the preceding—each cubic centimeter is equivalent to 2 grammes of crude drug of normal activity. Ergotinic acid, on account of its irritating properties, is eliminated—as in the case of Ergone—but no preservative is added. Ergot Aseptic is intended especially for hypodermatic administration. Dose, the contents of one bulb, administered hypodermatically; by mouth, 15 to 30 minims.

Pills and *Tablets* of Ergotin (Bonjean), 1-10 gr. to 5 grs.

Also various combinations in pill and tablet form.

NOTE.—A prominent pharmacologist says of Ergot: "It is advisable to utter a warning against the use of ergot of unknown origin. Many of the samples in daily use are worthless; they either have no action or their action is of such a feeble nature as to render them useless. A properly standardized product is absolutely necessary. Preparations of ergot should be freed from ergotinic acid." We procure, irrespective of cost, the best ergot obtainable. We

Claviceps purpurea. Ergot of Rye.

exercise the greatest care to cleanse the crude drug thoroughly and to percolate it in such a manner as to preserve its active principles. Because of the impossibility of selecting and accurately separating any definite active principle, a physiological assay is the only one suitable for determining the value of ergot and its preparations. The estimation of ergot according to the weight of the ergotinic or sclerotic acid it contains is fallacious; this method we discarded long ago, having learned that ergotinic acid is not the desirable active principle of the drug, but one which exerts a dangerously depressing influence upon the nerve centers without producing any hemostatic effect. We test our ergot preparations on cocks, the combs of which are peculiarly susceptible to an active product; the administration of appropriate doses of such a product is followed by characteristic blackening or blanching of the comb and wattles, due to the astringent effect of the ergot upon unstriated muscle fibre, particularly that surrounding the arterioles.

GELSEMIUM.

Also known as *Yellow Jessamine.*

The dried rhizome and roots of *Gelsemium sempervirens* (Linne) are used.

Contains two alkaloids, gelseminine and gelsemine, and a crystalline substance, gelsemic acid.

Nervine; antispasmodic; antineuralgic.

Employed in migraine, neuralgia, hysteria, chorea, asthma, whooping-cough, dysmenorrhea.

STANDARDIZED PRODUCTS:

Fluid Extract Gelsemium (U. S. P.); standard, 0.5% alkaloids. Average dose, 1 min.

Fluid Extract Gelsemium, fresh root; standard, 0.25% alkaloids. Dose, 1 to 10 mins.

Tincture Gelsemium (U. S. P.); standard, (0.05% alkaloids. Average dose, 8 mins.

Powdered Extract Gelsemium; standard, 2% alkaloids. **Dose, 1-5 to 1 gr.**

Concentration Gelsemperin.

Tablet Triturates Gelsemium tincture, 1, 3 and 5 mins.

Hypodermatic Tablets Gelsemine hydrochloride, 1-50 gr.

Tablet Triturates Gelsemperin, 1-8 gr. and 1-4 gr.

Also various combinations in pill and tablet form.

NOTE.—This drug is perhaps best administered in the form of a tincture; from 10 to 30 minims may be added to 4 ounces of water and of this a teaspoonful given every hour or two, lengthening the intervals as effects appear. Its action is to be carefully watched if the heart be weak. Gelsemium is said to act well when combined with cannabis indica in painful affections; in combination with passiflora it sometimes gives better results in hysteria, insomnia and chorea than either remedy alone. It is also used with success in laryngismus stridulus and in torticollis. Every lot of crude Gelsemium which we use is identified beyond any question, and the extracts adjusted to definite alkaloidal standards.

GUAIAC.

The resin of the wood of *Guaiacum officinale* (Linne) or of *Guaiacum sanctum* (Linne) is used.

Contains several resin acids, as well as a coloring matter known as guaiac yellow.

Alterative; diuretic; laxative.

Useful in gout, rheumatism, scrofula, syphilis, and tonsillitis.

STANDARDIZED PRODUCTS:

Fluid Guaiac (for tincture); standard, 60% resin. Dose, 15 to 60 mins.

Fluid Extract Guaiacum wood. Dose, 10 to 20 mins.

Tincture Guaiac (U. S. P.). Average dose, 1 fl. dr.

Compressed Tablet Guaiac, 2 grs.

Lozenge Guaiac, 2 grs.

Also various combinations in pill, syrup and tablet form.

NOTE.—More or less sophisticated Guaiac resin is offered for sale, the drug being adulterated by rosin and amber. It is unnecessary to say that none of this is used in our laboratory; every lot of Guaiac resin purchased is first subjected to a searching examination to make sure that it meets official requirements. Tincture of Guaiac is often used for the detection of blood stains; it produces a blue color when in contact with the red coloring matter of blood in the presence of some ozonized substance, as hydrogen dioxide. The ammoniated tincture of Guaiac is frequently employed in the treatment of sore throat; the following

makes a good gargle: Tincture Guaiac, ammoniated, ℥iv; Tincture Thuja, ℥ii; Potassium chlorate, ℥ii; Tincture Cinchona Compound, ℥ii; Powdered Acacia, q.s.; Aquæ, q.s. ad ℨiv.

GUARANA.

Also known as *Brazilian Cocoa.*

A dried paste consisting chiefly of the crushed seed of *Paullinia cupana* (Kunth).

Contains the alkaloid caffeine and free tannic acid.

Stimulant; antineuralgic; astringent.

Serviceable in headache, migraine, and diarrhea.

STANDARDIZED PRODUCTS:

Fluid Extract Guarana (U. S. P.); standard, 3.5% alkaloids. Average dose, 30 mins.

Elixir Guarana (N. F.); each fluidounce represents **96 grs. of the drug.**

Also combinations in pill and elixir form.

NOTE.—For these products we employ a crude material which, according to assay by the official process, yields not less than 3.5% of its peculiar alkaloidal principles. The activity of the drug is largely dependent upon its caffeine, of which it contains from 3 to 4%, although the percentage of tannin present is large enough to render Guarana products appreciably astringent in the treatment of atonic **chronic diarrhea.**

Yellow Jasmine

HOANG-NAN.

The bark of *Strychnos malaccensis* (Bentham). Contains the alkaloids brucine and strychnine. For properties and uses, see Nux Vomica.

Standardized Product:

Fluid Hoang-Nan (concentrated tincture); standard, 1% alkaloids. Dose, 3 to 10 mins.

Note.—The therapeutic effects of Hoang-Nan are very similar to those of nux vomica. Specific virtues have been claimed for it in the treatment of leprosy and other chronic skin diseases, but it is likely that the good results observed were due, rather, to its influence in promoting general nutrition. "The drug has a wide range of applicability as a roborant—in exhaustion of the muscles and torpor of the glandular organs; it sharpens the wits and renders the body more active and disposed to work. This stimulant action is not followed by an enfeebling reaction; the dose may be repeated daily for years without impairment of general health."

HYDRASTIS.

Also known as *Golden-seal.*

The dried rhizome and roots of *Hydrastis canadensis* (Linne) are used.

Contains three alkaloids—hydrastine, berberine, and canadine; when exposed to oxidizing agents the first breaks down and forms hydrastinine.

Tonic; astringent; cholagogue; antihydrotic.

Serviceable in gonorrhea, uterine hemorrhage, jaundice,

leucorrhea, and atonic gastritis; locally in hemorrhoids and ulcerations of mucous surfaces.

STANDARDIZED PRODUCTS:

Fluid Extract Hydrastis (U. S. P.); standard, 2% hydrastine. Average dose, 30 mins.

Fluid Golden-seal, colorless. Depends upon the white alkaloid hydrastine for its activity. Dose, 10 to 60 mins.

Fluid Golden-seal, aqueous; standard, 1% hydrastine. Dose, 10 to 30 mins.

Tincture Hydrastis (U. S. P.); standard, 0.4% hydrastine. Average dose, 60 mins.

Solid Extract Hydrastis; standard, 8% hydrastine. Dose, 2 to 10 grs.

Powdered Extract Hydrastis; standard, 8% hydrastine. Dose, 2 to 10 grs.

Concentration Hydrastin. Not the white alkaloid hydrastine, but a mixture of hydrastine and berberine.

Tablet Triturates Hydrastis tincture, 1, 2 and 3 mins.; Hydrastin (concentration), 1-20 gr.; and Hydrastine (white alkaloid), 1-16 gr., 1-8 gr. and 1-4 gr. Also various combinations.

NOTE.—We employ a crude drug which, when assayed by the official process, yields not less than 2.5% of hydrastine. Our list also includes the following Hydrastis alkaloids, which we supply in ounce bottles: berberine hydrochloride, berberine phosphate, berberine sulphate (neutral salt), hydrastine (white alkaloid), hydrastine hydro-

chloride, and hydrastine sulphate—all of unquestionable purity. As an injection in gonorrhea 5 grains of hydrastine to each ounce of water may be employed twice a day; or 40 to 80 minims of the fluid extract to the fluidounce instead.

HYOSCYAMUS.

Also known as *Henbane.*

The dried leaves and flowering tops of *Hyoscyamus niger* are used.

Contains three alkaloids—chiefly hyoscyamine and hyoscine, and, in very small quantity, atropine.

Antispasmodic; sedative; hypnotic.

Employed in insomnia, hysteria, spasmodic cough, headache, delirium tremens, and emphysema.

Standardized Products:

Fluid Extract Hyoscyamus (U. S. P.); standard, 0.075% mydriatic alkaloids. Average dose, 3 mins.

Tincture Hyoscyamus (U. S. P.); standard, 0.007% mydriatic alkaloids. Average dose, 30 mins.

Solid Extract Hyoscyamus (U. S. P.); standard, 0.3% mydriatic alkaloids. Average dose, 1 gr.

Powdered Extract Hyoscyamus; standard, 0.3% mydriatic alkaloids. Dose, 1-2 to 2 grs.

Pills Hyoscyamus extract, 1-2 gr. and 1 gr.

Tablet Triturates Hyoscyamus extract, 1-6, 1-4 and 1-2 gr.; Hyoscyamus fluid extract, 1 min.; and Hyoscyamus tincture (U. S. P.), 2 and 5 mins.

Pills, Hypodermatic Tablets, and *Tablet Triturates* of Hyoscine hydrobromide, Hyoscyamine (pure), and Hyoscyamine sulphate, 1-200 gr. to 1-50 gr.

Also various combinations.

NOTE.—There are about eleven known species of Hyoscyamus and several varieties of the official drug; the latter exhibit a wide difference in medicinal properties. We use the crude drug collected from biennial plants of the second-year growth, yielding, upon assay, not less than 0.08% of mydriatic alkaloids. Leaves of the first-year growth are extensively used in other laboratories, but as a rule they are almost worthless. Recently *Hyoscyamus Muticus*, collected in Egypt, has been introduced and used to some extent because of its low cost. This variety should never be employed; it differs from the official drug in its active alkaloids.

Hydrastis Canadensis—Golden-seal.

IGNATIA.

The seeds of *Strychnos Ignatii* (Bergius) are used.

Contains strychnine and brucine—proportionately more of the former than nux vomica contains.

Its medicinal properties and uses are the same as those of nux vomica.

STANDARDIZED PRODUCTS:

Fluid Extract Ignatia; standard, 1.5% alkaloids. Dose, 1 to 10 mins., cautiously.

Solid Extract Ignatia; standard, 6% alkaloids. Dose, 1-6 to 1 gr., cautiously.

Tablet Triturates of Ignatia, 1-10 gr., and of Ignatia tincture, 1 min. and 5 mins.

Also various combinations in pill, elixir and tablet form.

NOTE.—These products are prepared from authentic seeds and may be depended upon to produce the true effects of the drug. "Ignatia appears to possess a tonic influence over the nervous system not belonging to nux vomica. It is never a remedy for conditions of excitation of the nervous system, but its keynote is *atony;* it is a remedy for nervous debility. It should be thought of in anemic states of the brain—in cases where the patient exhibits hysterical, melancholic or hypochondriacal symptoms." It is a remedy for digestive disorders such as atonic dyspepsia and chronic catarrh of the stomach with atony; and sick headache of debility is relieved by it. As a rule, the dose given is too large; 5 to 10 minims of the tincture should be added to four ounces of water and the solution administered in teaspoonful doses every two or three hours.

IPECAC.

The dried root of *Cephaelis Ipecacuanha* (Brotero) or *Cephaelis acuminata* (Karst).

Contains three alkaloids—emetine, cephaeline, and psychotrine—and a glucoside known as ipecacuanhic acid.

Expectorant; emetic; diaphoretic.

Used in croup, bronchitis, pulmonary hemorrhage, and as an emetic in poisoning.

STANDARDIZED PRODUCTS:

Fluid Extract Ipecac, Rio (U. S. P.); standard, 1.5% alkaloids. Average doses: expectorant, 1 min.; emetic, 15 mins.

Fluid Extract Ipecac, Carthagena (U. S. P.); standard, 1.5% alkaloids. Dosage same as above.

Solid Extract Ipecac; standard, 8% alkaloids. Dose, 1-20 to 1-2 gr.

Wine of Ipecac (U. S. P.), 10 Gm. in 100 Cc.

Syrup of Ipecac (U. S. P.), 7 Gm. in 100 Cc.

Tablet Triturates of Ipecac fluid extract, 1 min., and of Ipecac powdered, 1-100 gr. to 1-2 gr.

Also various combinations.

NOTE.—Many official species of Ipecac are known to pharmacologists, some of which are mistaken for the true drug, or even purposely substituted for it. Different lots of Ipecac differ materially in the total amount of alkaloids contained; in some, emetine predominates, and in others cephaeline—the proportion of alkaloid varying with the accidents of growth and surroundings of the individual

plant. We assay all our Ipecac products very carefully on account of this inconstancy in the proportion of active principles.

JALAP.

The dried tuberous root of *Exogonium purga* (Bentham) in used.

Contains a hard resin, insoluble in ether (convolvulin), and a much smaller amount of a soft ether-soluble resin (jalapin).

Cathartic; hydragogue; diuretic; anthelmintic.

Useful in the treatment of dropsy, constipation, and worms.

STANDARDIZED PRODUCTS:

Fluid Extract Jalap (N. F.); standard, 8% alcohol-soluble resin. Average dose, 15 mins.

Powdered Extract Jalap; standard, 32% alcohol-soluble resin. Dose, 2 to 5 grs.

Concentration Jalapin (Jalap resin, U. S. P.).

Also various combinations.

NOTE.—The Jalap of the market is frequently adulterated with or substituted by the cheaper Tampico jalap and male jalap or Orizaba root, and a product known as overgrown jalap has also been used. The first two possess in some degree the properties of true Jalap, but the last is practically inert. The true drug, used in our laboratories, is of prime quality, yielding, when assayed by the official process, no less than 8% of total resin, of which not more than 15% is soluble in ether.

KOLA.

The nuts of *Cola acuminata* (Schott and Endlicher) are used.

Contains caffeine and theobromine.

Stimulant; tonic.

Used in muscular and nervous debility and in cardiac weakness.

STANDARDIZED PRODUCTS:

Fluid Extract Kola Nut (P. D. & Co.); standard, 1% alkaloid. Dose, 10 to 30 mins.

Fluid Extract Kola, fresh nut; standard, 0.65% alkaloid. Dose, 10 to 30 mins.

Powdered Extract Kola Nut; standard, 4% alkaloid. Dose, 2 to 5 grs.

Wine of Kola; each fluidounce represents 60 grs. of the drug.

Kola Cordial. An elegant preparation of the drug, each fluidounce of which represents 120 grs. of selected Kola nut.

Compressed Tablets of Kola Nut, 5 grs., and of Kola Nut extract, 2 grs.

Also two or three combinations in elixir form.

NOTE.—The so-called *male* Kola is sometimes substituted for the genuine drug, as are several other false Kola nuts; these are practically devoid of alkaloids, and products made from them are, of course, worthless therapeutically. The fresh nuts contain the caffeine chiefly combined with kolatannic acid.

Cephaelis Ipecacuanha—Ipecac

NUX VOMICA.

Also known as *Quaker Button, Dog Button, Poison Nut.*
The dried ripe seed of *Strychnos Nux-Vomica* (Linne).
Contains two alkaloids—strychnine and brucine.
Stimulant; tonic; stomachic.
Employed in paralysis, neuralgia, chorea, epilepsy, alcoholism, collapse, insomnia, and emphysema.

STANDARDIZED PRODUCTS:

Fluid Extract Nux Vomica (U. S. P.); standard, 1% strychnine. Average dose, 1 min.

Tincture Nux Vomica (U. S. P.); standard, 0.1% strychnine. Average dcse, 10 mins.

Solid Extract Nux Vomica; standard, 5% strychnine. Average dose, 1-4 gr.

Powdered Extract Nux Vomica (U. S. P.); standard, 5% strychnine. Average dose, 1-4 gr.

Pills Nux Vomica extract, 1-8 gr., 1-4 gr. and 1-2 gr.

Pink Granule Nux Vomica, 1-50 gr.

Chocolate-coated Tablets Nux Vomica extract, 1-4 gr. and 1-2 gr.

Tablet Triturates Nux Vomica extract, 1-8 gr., 1-4 gr. and 1-2 gr.; Nux Vomica tincture, 1, 2 and 3 mins.; and Nux Vomica powdered, 1-100 gr., 1-10 gr. and 1-4 gr.

Pills, Hypodermatic Tablets, Tablet Triturates and *Compressed Tablets* of Strychnine, 1-100 gr. to 1-20 gr.; Strychnine arsenate, 1-100 gr. and 1-50 gr.; Strychnine arsenite, 1-100 gr. to 1-30 gr.; Strychnine nitrate, 1-100 gr. to 1-16 gr.; Strych-

nine phosphate, 1-100 gr. to 1-30 gr.; Strychnine sulphate, 1-1000 gr. to 1-16 gr.

Also a number of combinations in various forms.

NOTE.—The above products are made from crude material yielding no less than 1.25% of strychnine when assayed by the official methed; they are carefully adjusted to a definite strength so that each dose is uniform and positive as regards alkaloidal content. Our hypodermatic tablets and other products of the alkaloid or alkaloidal salts contain exactly the amount of medicament specified, and in its very purest form.

OPIUM.

The concrete milky exudation from the unripe capsules of *Papaver somniferum* (Linne) is used.

Contains numerous alkaloids, the most important being morphine, codeine, narcotine, and narceine.

Heroin (diacetyl morphine) is an artificial derivative of morphine.

Anodyne, narcotic, hypnotic, and antispasmodic.

Serviceable for the relief of pain and nervous irritability—in neuralgia, colic, spasms, delirium tremens, pleurisy, etc.

STANDARDIZED PRODUCTS:

Fluid Opium concentrated; contains 22 grs. crystallized morphine in each fluidounce and is designed for the extemporaneous preparation of the tincture. Dose, 1 to 4 mins.

Fluid Opium camphorated. Each fluidounce contains 1¾ grains of crystallized morphine, equal to 2 1-5 grains morphine sulphate. Designed for the extemporaneous preparation of the tincture. Dose, 8 to 20 mins.

Tincture Opium camphorated (U. S. P.); each fluidounce contains 0.22 grain (approximately ¼ gr.) crystallized morphine, equal to 11-40 grain morphine sulphate. Average dose, 2 fluidrachms.

Tincture Opium deodorized (U. S. P.); each fluidounce contans 5½ grains of crystallized morphine, equal to 6⅞ grains morphine sulphate. Average dose, 8 mins.

Tincture Opium (U. S. P.); each fluidounce contains 5½ grains crystallized morphine, equal to 6⅞ grains morphine sulphate. Average dose, 8 mins.

Solid Extract Opium; standard, 20% crystallized morphine. Dose, 1-4 to 1 gr.

Powdered Extract Opium (U. S. P.); standard, 20% crystallized morphine. Average dose, 1-2 gr.

Pills Opium, 1-2 gr.; Opium (U. S. P.), 1 gr.; Opium extract, 1-4 gr., 1-2 gr. and 1 gr.

Chocolate-coated Tablets of Opium camphorated, tincture, 10 mins.; and of Opium powdered, 1-2 gr.

Tablet Triturates Opium camphorated, tincture, 2, 5 and 10 mins.; Opium tincture, 3 mins.; and Opium powdered, 1-8 gr. to 1 gr.

Pills, Granules, Hypodermatic Tablets, Tablet Triturates and *Chocolate-coated Tablets* of Morphine acetate, 1-8 gr. and 1-4 gr.; Morphine hydro-

chloride, 1-8 gr. to 1-2 gr.; Morphine meconate, 1-4 gr.; Morphine phthalate, 1-4 gr.; Morphine sulphate, 1-50 gr. to 1-2 gr.; Morphine valerianate, 1-8 gr.; Codeine, 1-10 gr. to 1 gr.; Codeine phosphate, 1-8 gr., 1-4 gr. and 1-2 gr.; Codeine sulphate, 1-10 gr. to 1 gr.

Also many combinations of the drug and its alkaloids in various forms.

NOTE.—Not a few unofficial varieties of Opium find their way into the market. The drug is often falsified and extensively adulterated with ash, flour, gum arabic, clay, and pitch. Good Opium contains roughly one-sixth its weight in alkaloids; we select for our use Opium assaying no less than 9% of crystallized morphine. All our Opium products may be depended upon to be absolutely true to label.

PHYSOSTIGMA.

Also known as *Calabar Bean.*

The ripe seed of *Physostigma venenosum* (Balfour) is used.

Contains an important alkaloid—physostigmine, or eserine.

Analgesic; myotic; sedative; spinal depressant.

Employed in tetanus and other convulsive diseases, neuralgia, muscular rheumatism, and chronic bronchitis; and in 0.2% to 0.5% solution to contract the pupil in ophthalmoneonatorum, corneal ulcer, and other ocular diseases.

Strychnos Nux-vomica—Poison Nut.

Standardized Products:

Fluid Extract Physostigma; standard, 0.15% ether-soluble alkaloids. Dose, 1 to 4 mins.

Tincture Physostigma (U. S. P.); standard, 0.014% ether-soluble alkaloids. Average dose, 15 mins.

Solid Extract Physostigma; standard, 2% ether-soluble alkaloids. Dose, 1-8 gr., cautiously increased.

Powdered Extract Physostigma (U. S. P.); standard, 2% ether-soluble alkaloids. Average dose, 1-8 gr., cautiously increased.

Ophthalmic Tablet Physostigmine salicylate, 1-8 gr.

Tablet Triturate Physostigmine salicylate, 1-100 gr.

Hypodermatic Tablets and *Tablet Triturates* Physostigmine sulphate, 1-100 gr. and 1-50 gr.

Also several combinations in tablet form.

Note.—The above products are prepared from selected drug yielding, when assayed by the official process, not less than 0.15% of alkaloid soluble in ether. Our ophthalmic tablets of Physostigmine salicylate will be found very convenient for the extemporaneous preparation of solutions for the reduction of intra-ocular pressure. They dissolve readily in distilled water, and yield a solution of definite strength.

PILOCARPUS.

Also known as *Jaborandi.*

The leaflets of *Pilocarpus Jaborandi* (Holmes) or of *Pilocarpus microphyllus* (Stapf) are used.

Contains three alkaloids—pilocarpine, iso-pilocarpine, pilocarpidine—and possibly a fourth.

Diaphoretic; diuretic; myotic; cholagogue.

Employed in the dropsy of nephritis, in uremia, eclampsia, muscular rheumatism, acute coryza, alopecia, and asthenopia.

STANDARDIZED PRODUCTS:

Fluid Extract Pilocarpus (U. S. P.); standard, 0.4% alkaloids. Average dose, 30 mins.

Hypodermatic Tablets Pilocarpine hydrochloride, 1-20 gr. to 1-2 gr.; Pilocarpine nitrate, 1-20 gr. to 1-3 gr.

Tablet Triturates Jaborandi, fluid extract, 1 min.; Pilocarpine hydrochloride, 1-100 gr. to 1-10 gr.

Pill Pilocarpine hydrochloride, 1-16 gr.

NOTE.—As previously stated, this drug in some instances contains too little pilocarpine to estimate in the usual way—hence we select it very carefully and require it to contain at least 0.5% alkaloids. "Jaborandi is the most reliable and powerful of the diaphoretics. In dropsy it has been widely employed and certainly is a most efficient remedy. It is usually given in the form of the fluid extract or the alkaloid. When excessive vomiting is produced by the drug it is better to administer it every ten minutes in fractional doses. After the second or third dose, unless contraindicated, whiskey and hot water should be given."

PODOPHYLLUM.

Also called *May Apple* and *Mandrake root.*

The dried rhizome of *Podophyllum peltatum* (Linne) is used.

Contains 4 to 5% of resin of complex constitution.

Cholagogue; cathartic; alterative.

Employed in constipation, rheumatism, scrofula, and hepatic congestion.

STANDARDIZED PRODUCTS:

Fluid Extract Podophyllum (U. S. P.): standard, 4.25% resin. Average dose, 8 mins.

Powdered Extract Podophyllum; standard, 17% resin. Dose, 1 to 5 grs.

Pink Granule Podophyllum resin, 1-40 gr.

Concentrations Podophyllin, and Podophyllin yellow.

Pills, Tablet Triturates and *Chocolate-coated Tablets* of Podophyllin, 1-20 gr. to 1 gr.

Also a number of combinations in various forms.

NOTE.—The cheaper East Indian drug, *Podophyllum Emodi*, has been imported and substituted for the true *P. peltatum.* We employ none but the official variety. "This drug is the most efficient antibilious cathartic we possess. It has a marked affinity for the small intestine and influences the entire alimentary tract, which in proper doses it stimulates to action; larger doses irritate. Minute doses relieve prolapsus ani in children, and in proctitis it may be prescribed with benefit. Combined with alteratives it is a valuable addition to the treatment of chronic scrofulous and syphilitic conditions."

QUEBRACHO.

Also known as *Aspidosperma.*

The bark of *Aspidosperma Quebracho-blanco* (Schlechtendal) is used.

Contains several alkaloids, the most important of which is aspidospermine.

Antispasmodic; respiratory stimulant.

Employed in asthma, spasmodic croup, and dyspnea.

STANDARDIZED PRODUCT:

Fluid Extract Quebracho (N. F.); standard, 1% alkaloids. Dose, 15 to 60 mins.

NOTE.—The fluid extract well represents the drug; the aspidospermine of commerce is a more or less impure mixture of its alkaloids.

SANGUINARIA.

Also known as *Blood-root.*

The dried rhizome of *Sanguinaria canadensis* is used.

Contains five or six alkaloids, the chief of which are sanguinarine and chelerythrine.

Expectorant; emetic.

Employed in croup and bronchitis.

STANDARDIZED PRODUCTS:

Fluid Extract (hydro-alcoholic) Sanguinaria; standard, 2.5% sanguinarine. Dose, 2 to 5 mins.

Fluid Extract (acetic) Sanguinaria (U. S. P.). Average dose, 1½ mins.

Aconitum Napellus—Monkshood, Wolfsbane.

Tincture Sanguinaria (U. S. P.); standard, 0.25% sanguinarine. Average dose, 15 mins.

Concentrations Sanguinariin and Sanguinarine nitrate.

Also various combinations.

NOTE.—The above products are made from crude material collected late in the year after the death of the foliage, when the active principles of the drug are fully developed. A convenient form in which to administer Sanguinaria is our standardized tincture. From 5 to 30 minims may be diluted with an ounce of water, and a teaspoonful of this administered every one, two or three hours.

SCOPOLA.

The dried rhizome of *Scopola carniolica* (Jacquin) is used.

Contains scopolamine or hyoscine, hyoscyamine, and atropine.

Mydriatic; sedative.

For uses, see Hyoscyamus.

STANDARDIZED PRODUCTS:

Solid Extract Scopola (U. S. P.); standard, 2% mydriatic alkaloids. Average dose, 1-5 gr.

Hypodermatic Tablet Scopolamine hydrobromide, 1-100 gr.

Also Hypodermatic Tablet of Scopolamine and Morphine.

NOTE.—The drug itself, which in its action is very similar to hyoscyamus, is seldom used in medicine; the

alkaloid scopolamine, which is considered chemically identical with hyoscine, is however employed to some extent in ophthalmology, in 0.1 to 0.2% solution; also hypodermatically in the treatment of mania. Scopolamine and Morphine are administered conjointly, by the hypodermatic method, as an aid to ether or chloroform anesthesia.

SQUILL.

The bulb of *Urginea maritima* (Linne) is the part used.

Contains three active glucosides, namely, scillipicrin, scillitoxin, and scillin.

Diuretic; stimulant expectorant.

Employed in the treatment of dropsy, croup, bronchitis, etc.

STANDARDIZED PRODUCTS:

Fluid Extract (hydro-alcoholic) Squill; tested physiologically. Dose, 1 to 10 mins.

Fluid Extract (acetic) Squill (U. S. P.). Average dose, 1½ mins.

Tincture Squill (U. S. P.). Average dose, 15 mins.

Syrup Squill (U. S. P.); 100 Cc. represents vinegar of Squill, 45 Cc.

Also a number of combinations in various forms.

NOTE.—Squill is another drug which cannot be assayed chemically. We test it physiologically and adjust the extracts of it, in each instance, to a definite standard of strength, thus ensuring for our Squill products therapeutic reliability.

STRAMONIUM.

Also known as *Thorn-apple.*

The dried ripe seeds of *Datura Stramonium* (Linne) are used.

Contains, among other alkaloids, chiefly hyoscyamine and atropine.

For action and uses see Belladonna.

STANDARDIZED PRODUCTS:

Fluid Extract Stramonium (U. S. P.); standard, 0.25% mydriatic alkaloids. Average dose, 1 min.

Fluid Extract Stramonium seed (N. F.); standard, 0.35% mydriatic alkaloids. Dose, 1 to 4 mins.

Tincture Stramonium (U. S. P.); standard, 0.025% mydriatic alkaloids. Average dose, 8 mins.

Solid Extract Stramonium (U. S. P.); standard, 1% mydriatic alkaloids. Average dose, 1-5 gr.

Solid Extract Stramonium seed; standard, 1.4% mydriatic alkaloids. Dose, 1-8 to 1 gr.

Powdered Extract Stramonium leaves; standard, 1% mydriatic alkaloids. Dose, 1-5 to 1 gr.

Also combinations in pill and tablet form.

NOTE.—Stramonium is so similar to belladonna in its action that the two drugs are practically identical. The former has been employed in all the conditions for which belladonna is commonly used, but has acquired special repute as a remedy for asthma —by inhalation of its smoke.

STROPHANTHUS.

The ripe seeds of *Strophanthus Kombe* (Oliver).

Contains a crystalline glucoside—strophanthin.

Cardiac stimulant; diuretic.

Of service in the various affections of the heart in which digitalis is commonly given. It is reputed to be more decided in its action and free from cumulative effects; also that it produces less constriction of the blood-vessels and is therefore preferable when arterial tension is high.

STANDARDIZED PRODUCTS:

Strophanthone. A refined preparation of Strophanthus, of definite and uniform activity—tested physiologically—which may be administered either orally or hypodermatically. Dose, 15 minims; hypodermatic dose, 8 minims.

Tincture Strophanthus (U. S. P.); tested physiologically. Average dose, 600 heart tonic units* (8 mins.).

Tincture Strophanthus (U. S. P. 1890); tested physiologically. Average dose, 600 heart tonic units* (15 mins.).

Pill Strophanthus, 1-20 gr.

Tablet Triturates Strophanthus tincture, 1, 2 and 5 mins.

Also various compound preparations of the drug and its glucoside.

NOTE.—In the market Strophanthus is frequently mixed

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*A heart tonic unit is ten times the normal minimum fatal dose per gramme body weight of standard test frogs when administered under proper test conditions. Literature on application.

with seeds of other varieties of the plant, of which there are twenty-eight, containing strophanthin in varying proportions or not at all. One sample has been found to contain ninety times more of the active principle than another. We use only the seeds of *Strophanthus Kombe*, of prime quality. But as the amount of strophanthin even in the best crude drug varies considerably, it is necessary to standardize the finished preparations, and to do so physiologically, inasmuch as no chemical procedure will answer. Our products are tested on frogs, in much the same manner as digitalis. We recommend to the prescriber our special preparation of the drug, Strophanthone; in this preparation the non-essential elements are reduced to a minimum, while the normal proportion of strophanthin in the seed is preserved. The activity of this product is just one-half that of the official tincture when the latter is prepared from a prime quality of drug.

VERATRUM.

Also known as *American Hellebore.*

The dried rhizome and roots of *Veratrum viride* (Aiton) are used.

Contains several alkaloids, most important of which are protoveratrine and jervine.

Cardiac depressant; diaphoretic; diuretic; febrifuge. Employed in eclampsia, acute fevers, and mania.

STANDARDIZED PRODUCTS:

Fluid Extract Veratrum (U. S. P.); standard, 1% alkaloids. Average dose, 1½ mins.

Tincture Veratrum (U. S. P.); standard, 0.1% alkaloids. Average dose, 15 mins.

Tablet Triturates Veratrum viridé tincture (U. S. P.), 1 min. and 2 mins.

Veratrone. This is an aseptic, non-irritating product, of definite and uniform strength, for oral or hypodermatic use. Dose, 15 to 30 minims; hypodermatic dose, 8 to 15 minims.

NOTE.—The above preparations are made from carefully selected crude material, adjusted physiologically to a fixed strength. Both guinea-pigs and dogs are used to *prove* and to *measure* their activity in every instance. Our special product of the drug—Veratrone—deserves emphasis. It is one-fourth the strength of the official fluid extract and has repeatedly given evidence of its superiority over other fluid preparations of Veratrum. To the obstetrician it is of especial value; in puerperal eclampsia and all other conditions in which the drug is indicated it will be found to be prompt and positive in its action. It is favorably regarded by hospital authorities, one of whom writes: "It has so far shown no deterioration on keeping; its subcutaneous use is not followed by local irritation; the preparation should commend itself to all practitioners who believe in the Veratrum treatment of eclampsia."

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POSTSCRIPT.

The foregoing pages include only drugs and drug products, and take no cognizance of a large number of chemical preparations and animal products, besides omitting some important preparations of vegetable origin, such as Taka-Diastase and Nuclein solutions. Included in the list of remedial agents which we subject to standardization are certain Serums, Vaccines, Bacterial Vaccines, Tuberculins, Digestive Ferments, Adrenalin products, disinfectants such as Kreso and Cresylone, and miscellaneous pharmaceutical preparations; for example, Tinctures of Iodine and Ferric Chloride, and Syrups of Ferrous Iodide and Hydriodic Acid.

To these may still be added all definite chemical compounds, as illustrative of which we may cite Formidine, Iodalbin, Acetozone, Alkaloids and their salts, Hydrogen Peroxide and others.